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TRAFFIC DIGEST & Review

NORTHWESTERN

The

Traffic Digest & Review

OF THE TRAFFIC INSTITUTE, NORTHWESTERN UNIVERSITY

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This publication is produced to serve as a source of information and a medium for the expression of responsible opinion in the street and highway traffic field. From time to time there will appear herein expressions of opinion that do not necessarily reflect official Traffic Institute policy.

In This Issue

Allstate Insurance Company 1
Organizing the Traffic Function 2
Hamm, Fernstrom, Sullivan Get Field Appointments 5
Three "Firsts" for the Institute 7
Statistical Story 8
Know the Law 10
TD&R Bonus 14
Driver and Pedestrian Condition 15
Eastern Regional TPA Graduate Conference . . 45
Training Calendar 46

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THE ALLSTATE INSURANCE COMPANY

(Sixth in a series of articles on organizations which have aided the growth and development of the Traffic Institute.)

THE ALLSTATE Insurance Company, and now through its Allstate Foundation has been making important contributions to the work of the Traffic Institute since 1952.

Allstate grants have aided the Institute's research and development activity—the program aimed at establishing qualitative measurements and quantitative guides for use by administrators in conducting traffic supervision programs.

MR. FENTRESS

In making the first grant to the Institute in 1952, Calvin Fentress, Jr., president of Allstate, said: "Our company has a high regard for the Traffic Institute's program, and we are pleased to make this contribution to the splendid work that is being done to help public officials meet their responsibilities in traffic supervision and accident prevention."

Allstate's broad traffic safety program is divided into several general areas. Among these are: (1) the support of numerous organizations and projects on the national as well as community level to improve traffic conditions and reduce accidents, and (2) the issuance of college grants to establish courses providing adequate training for teachers of high school driving courses.

In recognition of the value of high school driver training programs, Allstate in 1953 introduced the Young Driver Discount Plan. Under this the company allows premium discounts of up to 15 per cent to drivers under 25 who have successfully completed approved high school courses in behind-the-wheel driving and classroom study.

Allstate's growth in the insurance industry has been remarkable. In making his annual report for 1954, Mr. Fentress said: "Allstate is now entering its twenty-fifth year with a history of almost unparalleled growth in the industry. We began in 1931 in a one-room office with a staff of 20. We now have a staff of nearly 10,000 and have become the largest writer of automobile insurance."

The home office of the Allstate Insurance Company is at 7447 Skokie Boulevard, Skokie, Ill.

Traffic Supervision

Organizing the Traffic Function

(Editor's note: This is the eighth part in a series on Traffic Supervision by Franklin M. Kreml and George Larsen, Jr.)

General manpower requirements of traffic service

Many factors enter into the determination of personnel requirements for police traffic service. First, traffic problems will vary from city to city; the need for traffic supervision is far greater in some cities than in others of the same size. Secondly, the degree of specialization will largely influence the number of men assigned to a traffic division or to the specialized units. The size and character of the area to be covered, the caliber and abilities of personnel employed, the kind of traffic (local or through), and to some extent the geographical location of the city, are some of the other pertinent factors which make it difficult to apply a precise formula to determine needs.

The individual city must determine its own needs on the basis of its own problems. There are no standards or clear-cut warrants by which departments can determine precisely how many men are needed, either as full-time traffic men or the equivalent time of general police officers. However, if experience is any guide to success, the International Association of Chiefs of Police reports that in cities which have had success in traffic supervision, one or the other of the following "rules of thumb" or general guides is revealed. The first is keyed to general traffic needs of the community; for each 10,000 people, the community needs at least four full-time (or their equivalent) traffic officers. The second guide is geared to available manpower, and indicates that approximately one-fourth to one-third of the force should be assigned to traffic duties. The increasing urgency of traffic supervision makes the larger estimate more likely to be valid, especially in growing communities.

Using one-third of the force for traffic does not necessarily mean that one-third of the department is working out of the traffic division. But in adding up the activity reports of all personnel we should find that some 30 to 35 per cent of the total man-hours of the department are given over to traffic work of some kind.

The IACP has come up with estimates of manpower needed to give proper attention to accident investigation and patrol enforcement, but has not developed estimates for other traffic jobs. If these two key services are adequately manned, then it is likely that the other services will be proportionally manned. It is not practical to make generalized estimates

of how many men are needed to direct traffic, for example. There is such variety of factors, and their relative effect from city to city, that the needs of each city must be studied on an individual basis.

The IACP has found that a set of three accident investigation squads, e.g., one accident-investigation car with two men on duty around the clock, will be needed for each 15 fatal traffic accidents per year. This force should be increased by one squad daily (one car for eight hours) for each additional five fatal accidents per year. This estimate assumes that for each five fatal accidents the unit will investigate in a year, it will also investigate a proportionate number of personal-injury and property-damage accidents. The currently (1954) accepted reporting ratio for traffic accidents is one fatal for each 55 personal-injury and each 200 property-damage accidents. The annual expected accident-investigation load for each squad would thus be some 1,280 accidents. There is reason to believe that this work-load is higher than we should realistically expect from each squad, especially if our accident investigators are to make good investigations, prepare themselves properly for the job, and do necessary follow-up as requred in hit-run investigation, getting follow-up statements, doing good case preparation, and testifying in court. A more realistic work-load per squad would be some 1,000 accidents per year, or something near three accidents per day, and this estimate has wide acceptance.

The manpower figures obtained by these estimates are the number of men needed *net daily*. To this number must be added necessary relief for days-off, vacation, sick-leave, holidays, and other non-working time. With a work-week of 48 hours, such relief generally requires one-third more men than are needed daily to man the units. With a 40-hour week, approximately one-half more men are needed than will be used daily. Let us see how this works out. If we experience 40 fatal accidents per year, for example, our total accidents per year would be about 10,000. To investigate these we would need a minimum of eight accident-investigation squads working each day. If these are two-man units, as recommended by IACP, we need 16 men daily to operate them. Working on a 48-hour week, we would need at least 21 men assigned to the accident-investigation units, and for a 40-hour week, we'd need 24 men. This would be in the nature of a minimum need, based on one unit for each five fatals. If we take the recommended work-load of 1,000 accidents per year per unit, then we would need some 10 units and a total number of 26 men for a 48-hour week, or 30 men for a 40-hour week.

For traffic patrol and enforcement, if such patrol units are to supply the total traffic enforcement needed in the program, the number of units is determined by the accident situation, by the enforcement index we want to maintain, and by the number of hazardous violations apprehended in an average day per unit. Expressed mathematically, we find:

$$\text{TLE Units} = \frac{\text{(F plus PI acc.) x Enf. Index x Conviction Rate}}{\text{Traffic Arrests for Haz. Viol. per Unit per Year.}}$$

In this formula no attempt is made to indicate what should constitute good productivity (traffic arrests per year) for each unit. Informed opinion is that six hazardous arrests per day per unit (or roughly 2,000 per year) is not unrealistic, and that an average of that productivity would enable many departments to convert lagging enforcement programs into something vital and effective.

Experience has shown that there is no significant difference in productivity berween one-man and two-man patrol units. The enforcement action produced by a two-man unit tends to be the average of the two men involved, rather than a total of their individual potentials. The decision between one-man and two-man units will remain primarily one of local choice, largely influenced by policy, custom, availability of vehicles, and factors affecting the personal safety of the officers on patrol. We cannot here settle the question of which patrol unit is appropriate; but we can state unequivocally that where personal hazards are not high, and where available manpower is limited, many departments will find their patrol effectiveness doubled by converting from two-man to one-man traffic patrols. Even our largest cities, traditionally committed to two-man patrol units, are now experimenting with one-man units to replace most, if not all, of the two-man units now maintained, and experiencing marked success.

The number of administrative and supervisory personnel needed for the traffic division, and the number of men required to handle intersections and parking enforcement (plus other miscellaneous activities) must be determined locally by factors which cannot be set up by standards or simple formulas. In arriving at any arithmetic conclusions of manpower needs, all estimates must necessarily be adjusted to come within the limitations of budgets and of total personnel available. A realistic approach is necessary. For example, if the formulas and recommendations indicate that the traffic division should have 60 men, and the total police force is 100 men, we must make an adjustment. Either the traffic force must be pared down to meet the limitations of available manpower, or the total department strength must be built up proportionately. In most cases some compromise can be effected between what manpower is needed for traffic activities and what manpower is available. When we cannot get as many men as we can validly show are needed, it becomes all the more important that traffic men (as well as all personnel) be carefully selected, intensively trained, and adequately supervised to produce the maximum in effectiveness, and that traffic work be made the job of every man on patrol.

Hamm, Fernstrom, Sullivan Get Field Appointments

MR. HAMM

HUDSON R. Hamm, assistant director of field service for the Traffic Institute of Northwestern University and of the Traffic Division of the International Association of Chiefs of Police, has been named field director of both organizations.

In announcing the appointment, Ray Ashworth, acting director of the Institute and IACP Traffic Division, said that Mr. Hamm succeeds George C. Bowers, who resigned to return to his native state of California.

Clifford E. Fernstrom, field representative of both organizations since 1948, succeeds Mr. Hamm as assistant director of field service.

Another recent appointment was that of L. B. Sullivan as Southern field representative of the Institute and IACP Traffic Division. Former director of the Alabama Department of Public Safety, Mr. Sullivan replaces Sam H. Manning, who returned to the Memphis Police Department as captain.

MR. FERNSTROM

Mr. Hamm began his professional career with the Ft. Lauderdale, Fla., Police Department and served as commander of the traffic division following his graduation from the Institute's traffic police administration course in 1942. Shortly thereafter he joined the IACP Traffic Division-Institute field staff, working out of the Evanston headquarters. Later he served as Southern representative with headquarters in Atlanta. In November, 1951, he was named assistant director of field service.

Mr. Fernstrom also is a graduate of the Institute's traffic police administration course ('45 fall class). A member of the Minneapolis Police Department when he attended the Institute, Mr. Fernstrom resigned in 1948 to join the Institute and IACP Traffic Division field staff.

MR. SULLIVAN

Mr. Bowers, who has returned to the West Coast, began his police career in Berkeley, Calif., and served as chief of police of Winnetka, Ill., and San Pablo, Calif., before joining the field staff in 1948. He was made field director in November, 1951.

Mr. Sullivan is a native of Kentucky. He was graduated from Lewis County High School in Vanceburg, Ky., and entered the U.S. Air Force in 1941. He served four years and was a staff sergeant when released from active duty in 1945.

He was an investigator for the Office of Price Administration in Birmingham, Ala., from February, 1946, to May, 1947, and served with the

Alabama Public Service Commission from May, 1947, until January, 1951. In April, 1951, Governor Gordon Persons appointed Mr. Sullivan director of the Alabama Department of Public Safety. He served in this position until January of this year.

As Southern field representative, Mr. Sullivan will have headquarters in Montgomery, Ala.

TRAFFIC POLICE ADMINISTRATION COURSE DEADLINE: JUNE 1

June 1 is the deadline for police departments to apply for grants-in-aid and for admission for their representatives to the 1955-56 Traffic Police Administration Training Program at the Traffic Institute of Northwestern University.

Grant-in-aid awards totaling $37,200 have been made available by the Kemper Foundation for Traffic Safety, Chicago. These represent sixteen $1,650 fellowships and sixteen $675 tuition scholarships. Eight awards of each category will go to municipal police departments and eight to state and county police and highway patrol agencies.

The 1955-56 training program begins September 22, 1955, and will continue through June 11, 1956. Application forms may be obtained from the Traffic Institute, 1704 Judson Ave., Evanston, Ill.

INSTITUTE TO CONDUCT TRAFFIC TRAINING FOR AIR FORCE

A three-week course in motor vehicle traffic control will be conducted in July for the United States Air Force by the Traffic Institute.

Purpose of the training is to broaden the knowledge of officers and civilian supervisory personnel in the engineering, education, and enforcement fields of vehicle accident prevention and traffic control; indoctrinate them in modern traffic control techniques; and provide them with the technical background necessary for sound traffic programs on Air Force installations.

The 100-hour course is scheduled July 11-29. Subject matter will be divided into the following sections: vehicle accident investigation, Air Force traffic accident and violation reporting, traffic accident prevention, the operator, the pedestrian, the vehicle, the highway, civilian and military traffic rules and laws, supervision of highway, vehicle use and users, and traffic safety education.

The training is designed for officers and civilian supervisory personnel in Ground Safety, Installations, Transportation, and Provost Marshal.

Three "Firsts" for Institute

Institute photo by William B. Smith

When Sgt. Kathleen J. Twohig of the Seattle Police Department and Col. Sudsguan Tansadith of the Bangkok, Thailand, Police Department attended the recent two-week course in "Supervision of Personnel" at the Traffic Institute, Northwestern University, three "firsts" were recorded.

Sergeant Twohig was the first policewoman to attend a course at the Traffic Institute.

Colonel Tansadith was not only the first official from his country to attend an Institute course, but he was the first to attend the Institute under the new IACP-Foreign Operations Administration training program for foreign police officials.

Shown with Sergeant Twohig and Colonel Tansadith is James M. Slavin (standing), assistant director of training at the Traffic Institute.

The daughter of a policeman, Sergeant Twohig has been in police work for 12 years. Colonel Tansadith is chief superintendant of the police public welfare division of his department.

March Deaths Up; 3-Month Toll Still Under '54

Auto deaths went up in March—only the second month in the last 15 to show an increase.

That report was made the end of April by the National Safety Council, which tabulated 2,630 traffic deaths in March this year for a 4 per cent increase over March last year.

The only previous month in the last 15 in which a death increase occurred was November, 1954.

Despite the March increase, the Council said the death record for the first three months of 1955 was better than for the same period last year. The total of deaths was 7,800—a 1 per cent decline.

Preliminary mileage figures are now available for the first two months of this year, the Council said, and show a 6 per cent gain over the first two months of 1954. Since deaths were down 3 per cent for the two-month period, the result was a new record low mileage death rate of 6.0 deaths per 100,000,000 miles.

The Council's March summary is based on reports from 46 states, 23 of which had more deaths for the month. Twenty had fewer deaths and three reported no change.

For the three-month period, states with decreases outnumbered those with increases 24 to 21, with one state showing no change. The 24 states with decreases were:

Alabama	−38%	Oklahoma	− 8%
Arkansas	−35%	Colorado	− 7%
New Mexico	−34%	Iowa	− 7%
Arizona	−30%	Ohio	− 7%
Louisiana	−18%	Georgia	− 6%
Minnesota	−14%	California	− 5%
Idaho	−13%	New York	− 5%
Missouri	−13%	Indiana	− 4%
Virginia	−13%	Nebraska	− 4%
North Dakota	−11%	Oregon	− 4%
Florida	−10%	Pennsylvania	− 4%
Tennessee	− 9%	Wisconsin	− 1%

The March increase was the result of accidents in rural areas. Reports of 537 cities showed a decrease of 2 per cent for that month and 6 per cent for the first three months.

Among those cities, 384 had perfect records in March. The three largest were Rochester, N. Y. (332,500); Fort Worth, Tex. (251,000), and Honolulu, Hawaii (236,100).

For three months, 270 of the cities still had perfect records, the three largest being Norfolk, Va. (213,500); South Bend, Ind. (115,900); and Peoria, Ill. (111,900).

Of the the cities with fewer deaths for three months, the following have populations of more than 200,000:

Norfolk, Va.	−100%	Dallas, Tex.	− 31%
Seattle, Wash.	− 78%	Syracuse, N. Y.	− 25%
Tampa, Fla.	− 69%	Birmingham, Ala.	− 22%
Rochester, N. Y.	− 60%	Ft. Worth, Tex.	− 20%
Indianapolis, Ind.	− 53%	New Orleans, La.	− 19%
Worcester, Mass.	− 50%	St. Paul, Minn.	− 18%
Kansas City, Mo.	− 45%	Philadelphia, Pa.	− 16%
Long Beach, Calif.	− 45%	Toledo, Ohio	− 14%
Milwaukee, Wis.	− 39%	Houston, Tex.	− 13%
Jacksonville, Fla.	− 38%	New York, N. Y.	− 12%
San Francisco, Calif.	− 33%	Chicago, Ill.	− 10%
Omaha, Neb.	− 33%	San Diego, Calif.	− 10%
Dayton, Ohio	− 33%	Pittsburgh, Pa.	− 9%
St. Louis, Mo.	− 32%	Miami, Fla.	− 9%
Cleveland, Ohio	− 31%	Minneapolis, Minn.	− 7%

Detroit, Mich. ..... − 4%

The three leading cities in each population group for three months, ranked according to the number of deaths per 10,000 registered vehicles, were:

	Reg. Rate		*Reg. Rate*
Over 1,000,000 Population		200,000-350,000 Population	
Detroit, Mich.	3.2	Norfolk, Va.	0.0
Los Angeles, Calif.	3.3	Oklahoma City, Okla.	0.6
Philadelphia, Pa.	3.6	Worcester, Mass.	0.7
750,000-1,000,000 Population		100,000-200,000 Population	
San Francisco, Calif.	2.1	South Bend, Ind.	0.0
St. Louis, Mo.	2.6	Peoria, Ill.	0.0
Cleveland, Ohio	3.0	Utica, N. Y.	0.0
500,000-750,000 Population		50,000-100,000 Population	
Seattle, Wash.	0.3	Schenectady, N. Y.	0.0
Dallas, Tex.	1.7	Lincoln, Neb.	0.0
Milwaukee, Wis.	2.0	Kalamazoo, Mich.	0.0
350,000-500,000 Population		25,000-50,000 Population	
Kansas City, Mo.	1.1	Tucson, Ariz.	0.0
Denver, Colo.	1.3	Pensacola, Fla.	0.0
Indianapolis, Ind.	1.3	Muskegon, Mich.	0.0

10,000-25,000 Population

Modesto, Calif.	0.0
Casper, Wyo.	0.0
Kingsport, Tenn.	0.0

KNOW THE LAW

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The Traffic Institute

DUTY OF POLICE TO EXERCISE RESTRAINT

THE APPELLATE Court of Illinois recently had occasion to determine the legality of an arrest made by Chicago police officers under peculiar circumstances. *Oratowski and Porterfield v. Civil Service Commission of Chicago*, 3, Ill. App. 2d 551, 123 N.E. 2d 146 (Oct. 1954), was a proceeding before the Civil Service Commission in which the two officers were discharged from the service on charges of conduct unbecoming police officers, using coarse, profane and insolent language to a citizen, and wilful mistreatment of a person, in violation of the rules and regulations of the Chicago Police Department. On appeal to the Circuit Court the order of the Commission was reversed, but the Appellate Court reinstated the Commission's order.

According to the court's statement of facts, one Kaprowski, a driver for the Como Manufacturing Company, while waiting to keep an appointment with the manager, had his vehicle tagged for parking in a prohibited zone. He drove it to another location and returned to the original location to find the officer's police car parked in the very spot where his own had been tagged. Officer Oratowski overheard him speaking his mind to another bystander about the affair and, incensed at Kaprowski's vehemence, broke in on the conversation. Kaprowski then said to the officer, "Look where *you* are parked, you ignorant jerk. You gave me a ticket for parking where you are parked. You're all flatfoots!"

The officer thereupon told Kaprowski he was under arrest, but refused to tell him why or for what offense. The other officer, sitting by in the squad car, then went into action, and the two hustled the irate motorist into the squad car, and took him to jail. There was some "unnecessary roughness" in the process and it seems the officers finally told him he was arrested for disorderly conduct. The officers insisted that it was sufficient ground for arrest that Kaprowski had called them "ignorant jerks and flatfoots," and that they had used only sufficient force to overcome his resistance to arrest.

In upholding the order of the Commission discharging the two officers the Appellate Court said:

"An officer of the law must exercise the greatest degree of restraint in dealing with the public. He must not conceive that every threatening or insulting word, gesture or motion amounts to disorderly conduct. It may be of such a character or so provoked or conditioned as to be fully justified. * * * A municipality has no authority to clothe any officer with autocratic power to order the summary arrest and incarceration of a citizen without warrant or process of law. If the municipality could, it would render the liberty of every one of its citizens subject to the arbitrary whim of a police officer. * * * It is apparent from this statement of the law that words addressed to an officer in an insolent manner do not without any other overt act tend to breach the peace because it is the sworn duty of the officer not to breach the peace and beyond this to conduct himself so as to keep others from so doing. He has an obligation to exercise a great degree of restraint in dealing with the public and should not permit abusive statements to so arouse him that he will commit a breach of the peace. This Oratowski did not do. He allowed Kaprowski's remarks to arouse his ire and made an arrest for a fancied insult which was not in violation of the law. The concurrence of Porterfield in the act makes him guilty of the same violation."

A somewhat similar case, decided by the Supreme Court of Utah about the same time, is *Myers v. Collett*, 268 P. 2d 433, wherein a group of juveniles in an automobile were arrested on the streets of Salt Lake City after midnight. In a suit against the officers for false arrest and false imprisonment the Supreme Court said that while the evidence showed that the boys could not have been arrested and jailed except for the impudent remarks made by one of them, and this would not be sufficient as a breach of the peace to warrant the arrest, still the boys were then in violation of the Salt Lake curfew ordinance and the arrest was therefore lawful for that reason only.

In the Utah decision, the court calls attention to an old Michigan case, *Pinkerton v. Verberg*, 78 Mich. 573, 44 N.W. 579, 7 LRA 507 (1889), wherein a Kalamazoo police officer was sued for assault and illegal arrest and the Supreme Court held the plaintiff entitled to recover. Officer Verberg had followed Mrs. Pinkerton along the street to her home, suspecting her of street walking. When questioned regarding her activities she returned defiant answers, insisting she had done no wrong and finally daring the officer to arrest her. Although about to go on his way, Verberg accepted the dare and was wrestling about with her until persuaded by a passing citizen to desist and allow the lady to go home.

The Supreme Court held the arrest illegal inasmuch as no offense was committed in the presence of the officer, saying: "It is true that an officer, as a conservator of the peace, may arrest street walkers or common prosti-

tutes who are on the street plying their vocation, but a mere suspicion that they are doing so, where there is no act indicating that the party is there for that purpose, will not justify the arrest without a warrant."

Another interesting case of this type was *Heinze v. Murphy*, 180 Md. 423, 24 A2d 917 (1942), in which a judgment for the plaintiff for assault and battery and false imprisonment was affirmed by the Maryland Court of Appeals. Mrs. Murphy, plaintiff's wife, was involved in an automobile accident while driving the family car. Before the arrival of the investigating officers, Mr. Murphy came to the scene and drove their car away. Officer Heinze later came to the scene and, being unable to obtain full information from the other driver, went to the Murphy home to question Mrs. Murphy about the accident. She was quite agreeable but Mr. Murphy broke in angrily and told his wife not to answer any questions, ordering Heinze to leave and refusing to tell where he had taken the car. The following day Heinze again went to the Murphy home, still trying to get information so as to complete his accident report. Finding Mr. Murphy at work on the lawn, he was informed that Mrs. Murphy was not at home. When asked as to Mrs. Murphy's age, Murphy said he did not know. The officer then became somewhat aroused and told Murphy he could put him under arrest for refusing to answer questions. Murphy asked to be allowed to go into the house and call his lawyer, but the officer forbade him to move from the spot, telling him he was under arrest for resisting an officer. He seized Murphy by the arm, took him to the station and booked him for disorderly conduct. Murphy was released to his attorney after about 10 minutes, and the following morning was dismissed following a short hearing.

In affirming the judgment for the plaintiff the Court of Appeals said: "In this case the evidence is undisputed that the appellant, when he approached the appellee on his lawn, was seeking information to enable him to complete the report required of him. That he had a perfect right to do. But his action in arresting the appellee, under the circumstances as detailed in the evidence, and charging him with disorderly conduct, does not seem to have been fully justified. The disorderly conduct attributed to the appellee was that he refused to give the information sought, and used profane language. There is no evidence that the profane language if used was heard by anyone except the appellant, or beyond the appellee's premises. Under those circumstances the charges could not be sustained."

However, the court reduced the judgment to $25.00, saying: "It may well be that a person may not be required to answer questions which would be to their disadvantage, but in so declining it is not at all necessary to assume an antagonistic attitude, and thereby invite the same conduct from an officer. The appellee is not entirely free from unbecoming conduct. It is not a trespass for an officer of the law to go upon another's premises in the line of his duty, although his conduct afterwards may make

it a trespass. The appellee, by his own conduct, was responsible in some measure for giving, as the officer thought, cause for his arrest."

The court held that the officer acted in good faith, though mistakenly, and there was no wanton or malicious conduct to justify punitive damages.

Still another such case was *People v. Field*, 15 N. Y. S. 2d 561 (1935), in which the City Court of Rochester, New York, dismissed Field on a charge of assaulting a police officer. Officers had gone to Field's home on a minor complaint made by his wife, knocked on the door and announced they wanted to talk to him. He opened the door far enough so that one officer got his foot in, whereupon Field slammed the door on it. They then forced their way in and arrested him. The court said:

"In attempting to justify the right of the complainant officer to forcibly enter and then arrest, the prosecution urges that the defendant slammed the door on the officer's foot, thereby assaulting the police officer, and

POLICE FLEET SAFETY CONTEST

July 1 will mark the beginning of the third Police Fleet Safety Contest, jointly sponsored by the International Association of Chiefs of Police and the National Safety Council.

The first contest attracted 25 state police and highway patrol organizations and 58 municipal departments. The second contest, the 1954-55 competition which ends June 30, drew fewer state departments, 23, but more city police fleets, 76. A motorcycle category was added for the second contest, and 23 departments using two-wheelers are entered, and 25 which operate three-wheelers.

Departments wishing to participate in the 1955-56 Police Fleet Safety Contest should write to the National Safety Council, 425 N. Michigan Ave., Chicago 11, for registration and report forms. There is no charge for entering and participating in the contest.

so warranted the officer in arresting him. It is a novel and startling proposition that a householder may not slam his door in the face of an intruder who unlawfully puts his foot in the open crack of the door, without committing an assault! Placing one's foot on the threshold of the partly opened door without invitation to enter is a wrongful invasion of domicile and may be repelled with force. * * * The threshold of a door is still a barrier to a citizen's castle which may not lawfully, except upon invitation, be crossed by a stranger with no present authority to arrest. A complaint from the defendant's wife may explain the officer's presence, but mere complaint did not justify force, where no crime was then being committed. Their forcible entry being wrongful the defendant might repel the invasion of his home by force."

A SUPER TD&R "BONUS" FOR MAY!

"Driver and Pedestrian Condition," beginning on the next page, is a new chapter for the complete edition of the *Traffic Accident Investigator's Manual*, still being developed. It is presented in this issue as a "bonus" to TD&R subscribers.

It is the biggest bonus ever offered in this magazine. "Driver and Pedestrian Condition" is probably the most comprehensive writing that has ever been published on this subject, and it should be of interest to driver license authorities, court officials, driver training instructors, police, and others.

The current edition of the *Manual* contains 18 chapters of basic information, to which 14 chapters will be added to make up the ultimate, complete edition. Others (not all) of the 14 chapters to be added will be published in future issues of the *Traffic Digest & Review*.

The current, 18-chapter edition of the *Traffic Accident Investigator's Manual* is available at $3.50 per copy from the Traffic Institute, 1704 Judson Ave., Evanston, Ill.

* * *

OAKLAND ADOPTS NEW AMBULANCE SERVICE POLICY

Recently the City Council of Oakland, Calif., acted to end the use of police ambulances and utilize private concerns for that emergency function.

This will effect a considerable saving in funds, because the private service can be provided at a cost considerably under that of police-operated service. But more importantly, the change will release some 19 patrolmen for regular police duties. These men had been virtually lost to the police department by the assignment to the ambulance units.

The City Council in taking this step has drawn attention to the continuing efforts of the police department to replace officers engaged in non-police work with non-police personnel, as, for example, the use of civilian clerks to release patrolmen for enforcement work.

* * *

Mrs. Ina S. Thompson has been appointed by Florida's Governor Leroy Collins as motor vehicle commissioner. She is the first woman to hold a key administrative post in Florida.

DRIVER AND PEDESTRIAN CONDITION

Conditions of Persons as Mediate Causes of Accidents

34.010—Drivers and pedestrians will be considered together. In general, the same personal conditions that cause drivers to have accidents also cause pedestrians to have them.

Whether it is a pedestrian or a vehicle with its driver, we call it a traffic unit, as explained in 11.110. We do so to avoid repeating "drivers and pedestrians" when what we say applies to both. Because far more drivers than pedestrians are involved in accidents, we will simply speak of drivers without adding "and pedestrians" whenever what we say applies to either. Remember this when thinking of pedestrian accidents.

34.015—Behavior means what the driver or pedestrian does, that is, how he turns the wheel or presses the brake or steps into the street. Behavior of the person is reflected in part by the behavior of the traffic unit, which is the direct cause of the accident as explained in 11.445. In investigating an accident we must try to discover *driver or pedestrian conditions* that produce behavior as well as discover the behavior itself.

34.020—Driver or pedestrian conditions often team up with road or vehicle conditions to make a combination of mediate causes of an accident as explained in 32.010 and 32.020. A road condition or vehicle condition can, by itself, cause an accident; but far more often, faulty driver conditions by themselves result in behavior that causes accidents.

34.025—Some driver condition almost always contributes to an accident as a cause except in the rare instance when the accident can be attributed entirely to road and vehicle conditions. The best drivers can overcome almost any hazardous situation presented by road and vehicle conditions. The poorest drivers, however, can operate successfully only when road and vehicle conditions are favorable and when traffic presents few problems. Hence we are concerned with what driver conditions make a driver unable, in a specific accident, to solve the problems presented by road conditions, vehicle conditions, and traffic. We want to know how his *personality* contributed to the accident.

34.030—Personality, as it relates to traffic accidents, may be considered as having three principal parts:

1. *Natural abilities, or what the driver has to start with.*
2. *Learned capabilities that the driver has acquired by study and practice.*
3. *Character, or how the driver makes himself behave.*

34.035—Personality is affected by many temporary driver conditions such as intoxication, fatigue, drugs, and illness. These influence both abilities and character.

34.040—In the following pages, we will describe many driver abilities and conditions that contribute to accidents. These are summarized in Exhibit 34-1. We also explain how you look for signs of some of them.

34.045—Distinguish causes from circumstances. When you investigate an accident, you may find some unusual condition in the driver. You then have to decide whether this circumstance contributed to a violation, evasive action, or other direct cause of the accident. Ask yourself: "Would the accident have happened if this condition had not been present?" Do not assume that every lack of ability of a driver involved in an accident was a cause of the accident. A driver may have some dangerous impairment and yet that condition may not have had anything to do with the accident.

A vehicle with an intoxicated driver is stopped for a traffic signal. The vehicle is struck from behind by a sober driver. Intoxication did not contribute to the accident.

34.050—Distinguish between driver conditions before and after an accident. The accident often changes the condition of the driver. We are interested primarily in former conditions as possible causes. Be careful how you judge pre-accident conditions by what you see at the scene. You can observe many driver conditions, particularly physical abilities, after the accident; but you must ordinarily use other methods than observation to determine what his attitudes or conditions were immediately before the accident. It is important to ask yourself, "Did this driver condition contribute to this accident or did the accident create the condition?" Not only may driver condition suggest why an accident happened, but clues from the accident may suggest the driver condition contributing to it. For example, an open whiskey bottle in the car would suggest possible influence of alcohol and vomit in or on the car may indicate a driver sick before the accident.

34.055—Expert help is sometimes needed. Unfavorable road conditions, such as view obstructions, darkness, and slippery surfaces are usually easy to see during investigation. Vehicle conditions contributing to the accident are more difficult to detect. Driver conditions, especially attitudes and emotions, are most difficult of all to discover. Often the best anybody can do is to determine that the circumstances of the accident were such as to make some driver deficiency a possible or probable cause of the accident. Sometimes certain experts can help determine what driver conditions might have contributed. Doctors, especially, can discover conditions like heart ailments that may have been one of the causes. Psychologists can often get at attitude. Your job is to make such observations as you can of driver condition and inquire concerning circumstances which might suggest or preclude certain possible conditions; then, ask an expert for help if you need it.

34.060—When police have proof of a driver's condition, they can take whatever action is appropriate regardless of whether the condition contributes to the accident. Arrests for intoxicated driving are the most common police

action. Sometimes the action taken because of driver condition is merely a word of caution; sometimes the case may be referred to higher authorities for action. Certain driver conditions are hazardous but not illegal; for such conditions enforcement action is difficult. For example, falling asleep or having a heart attack while driving are very dangerous but, in most locations, do not break a specific law. Situations like these, if the driver should have anticipated them, usually justify a general charge such as reckless driving.

34.065—Nobody is expected to make detailed inquiry into *all* driver conditions mentioned here in connection with *every* accident. That would be impossible. Very serious accidents usually receive more careful study than others. Therefore, they give a greater opportunity to inquire about driver conditions than ordinary accidents.

34.070—If you think a driver condition is serious enough to warrant it, for example if you believe a driver may be an epileptic, or if he has a history of accidents that are otherwise inexplainable, recommend to your department that the case be referred at once to licensing officials for further study.

Natural Abilities

34.102—Deficient natural abilities can contribute to accidents in several ways. We are speaking of relativley permanent conditions, not diseases. Some physical or mental defects are deficiencies with which the person may have been born. These deficiencies are in three areas.

1. *Sensory* conditions, especially seeing and hearing, that keep the driver from becoming aware of road or traffic conditions. Discussed in 34.104 to 34.144.
2. *Conditions of mind and nerves* that prevent the driver from understanding hazardous conditions and making proper decisions concerning them. Discussed in 34.147 to 34.168.
3. *Bone and muscle* conditions that prevent the driver from operating the controls of the vehicle properly. Discussed in 34.171 to 34.197.

34.104—Vision. There are a dozen or more eye conditions that can handicap a driver. Some of the better known ones are mentioned here in approximate order of importance.

34.106—Visual acuity or sharpness of seeing is important mainly in reading signs with specific messages such as NO LEFT TURN. This deficiency is usually correctable with glasses. The test for visual acuity is the only eye test generally given in driver-license examinations. If glasses are needed to pass the test, the driver's license is restricted to driving with corrective lenses.

34.108—Some reasons for suspecting that visual acuity deficiency contributed to an accident are:

Accident involves movement in violation of sign, especially sign with small lettering or far away.

Driver says he did not see or understand such a sign.

Driving without glasses when license certificate shows restriction to them.

Confusion arising from failure to read or understand directional or street name signs.

34.110—You can test roughly for sharpness of seeing by asking the per-

son to read a car number plate in good light from about 100 feet away. If ability to see a sign is in question, try the driver on the actual sign that was involved in the accident from the position at which he would have to recognize it to take the required action in safety. Eye specialists can test accurately for visual acuity.

34.112—Night blindness is the inability to see objects of low contrast in low illumination, for example a pedestrian in dark clothing against a dark background 200 feet away from low-beam headlights. Night blindness is most commonly found among older people. It is not helped by glasses. Tinted glasses and tinted windshields add to this handicap. If you find a driver wearing tinted glasses at night, treat him as lacking knowledge of what they do to his night seeing ability. If the vehicle has a tinted windshield, treat it as a vehicle condition unfavorable to safe night driving rather than a driver's lack of knowledge of what it does to his night seeing. It is like an obscured windshield.

34.114—Suspect night blindness only at night, of course, outside of cities or other places with street lights, especially with drivers over 50 years old, under circumstances like these:

When car runs off pavement onto shoulder.

Pedestrian in dark clothing, animal, pile of dirt, unlighted truck is struck.

Driver runs into side of freight train.

Driver complains he just did not see object struck.

34.116—You can test roughly for night blindness by placing a person in dark clothes against dark background 200 feet from headlights with lower beams. Ask driver to tell whether he is standing or squatting. Some eye specialists can measure for night blindness, but it takes more than half an hour in a completely dark room.

34.118—Glare blindness is slow recovery from viewing dazzling lights at night. It is more common among older people than young. Susceptibility cannot be corrected by colored or other glasses. Sun glare can be reduced considerably by polaroid or other glasses.

34.120—Suspect glare blindness at night only when the driver has had an accident just after meeting a car with bright headlights or passing low, bright, street or other lights and:

Runs off road.

Runs into pedestrian, fixed object, animal, or slow-moving vehicle.

Complains he was blinded by headlights.

34.122—A rough test for glare blindness can be made by standing on road in darkness without street lights 100 feet from a car which is facing you in an adjacent approach lane. Place person in dark clothes against dark background alongside rear end of the facing car. After headlights of the car are switched off, determine whether the driver being tested can see person as soon as you do or how much later. If he takes twice as long as other observers do, he is definite in glare resistance. Glare resistance can be fairly accurately measured by special equipment or by some eye specialists.

34.124—Sometimes susceptibility to glare is due all or in part to looking directly at headlights rather than toward the edge of the road. This is a lack of knowledge and skill rather than eye defect.

34.126—A narrow field of vision is inability to see toward the sides. Sometimes when the field is very narrow this is called "tunnel vision." It cannot be corrected by glasses. People with sight in only one eye have a narrowed field of vision on the side of the poor eye.

34.127—Suspect narrow field of vision in the following kinds of accident situations when there are no view obstructions:

In right angle collisions when car on cross street is moving fast, particularly by day.

The driver says he never saw the car or pedestrian on his right or left by day or night.

Cutting in after overtaking and passing by day or night. It may apply to overtaking driver who fails to notice clearance at the side or overtaken driver who speeds up when he should have seen the car alongside.

34.128—For a rough test, stand about a foot away from and facing driver. Hold your arms straight out to your sides with fists closed and thumbs sticking up. Move your fists toward the driver so that they are in an imaginary straight line passing across the front of the driver's shoulders. Tell the driver, "Watch my nose." See that he does not turn his head or eyes. Then wiggle one thumb and ask, "Which thumb did I move?" If he cannot tell in several tries, move your arms back so that your thumbs are on a line about a foot in front of driver with your arms extended to your side. Repeat test. If necessary step back until thumbs are on a line two feet ahead of driver. Normal drivers see movement when thumbs are straight out at their sides. If you have to move back two feet or more, the field of vision is greatly restricted and may contribute to certain kinds of accidents. Most eye specialists can test accurately for field of vision. It can easily be done with quite simple equipment.

34.130—Sometimes cars that have obscured side windows, for example fogged by moisture or frost, give the effect of narrow field of vision. When windshield wipers are needed, the car also restricts field of vision. These are vehicle conditions, not driver conditions.

34.132—Depth perception deficiency as we will use the term here is an inability to judge distances of nearby objects by use of both eyes. There are many other ways of judging distance especially of distant objects. Lack of depth perception by use of two eyes cannot be corrected by glasses. Persons who have only one good eye largely lack this ability but may be able to judge distance well enough by other means.

34.133—Suspect deficient depth perception when:

Car bumps such things as other cars, posts, walls, or door of auto in close quarter maneuvering such as parallel parking.

Car sideswipes slightly in slow moving, narrow clearances especially by day.

Driver says he thought he had clearance in slow-moving operations.

34.134—No simple test for depth perception can be done without special equipment. Equipment of several kinds for this test is available and not complicated. Some eye specialists have the equipment and can test for depth perception.

34.136—Color blindness is the inability to distinguish certain shades of red or green. In rare cases the person is completely unable to distinguish any color. Color blindness is probably not very important in accidents. It is extremely rare among women and not common in men. Color blindness can be compensated for by *properly using* red or green transparent stripes on top of eyeglasses or windshield, but in practice this rarely is done or needed for driving by color-blind persons, although it is sometimes used by the color-blind whose jobs require them to recognize red or green markings.

34.137—Suspect color blindness when a male driver:

Runs a red light and insists he thought it was green.

Describes a red or green object, such as a car, as some other color.

34.140—Simple tests can be made. Do not make such tests with traffic lights because color-blind persons usually recognize them by position or with number plates because they have been told the color of ordinary plates. Try asking the persons the colors of *red* or *green* cars or clothing. You should know that you are not color blind yourself! Eye specialists have special equipment for giving tests of color blindness quickly and accurately.

34.141—Other eye defects are numerous but rare, difficult to relate specifically to accidents, and difficult to detect without special test equipment. For example, some people have difficulty fusing or combining the images formed by the two eyes. Under certain conditions especially at night and when combined with fatigue, difficulty with fusing may lead to confusion and an accident.

34.142—Hearing defects do not often contribute to accidents, but you might suspect deficient hearing when:

Someone sounded a horn on overtaking and the driver in question neglected to slow down or give way to right.

The driver apparently ignored a train whistle.

A pedestrian failed to heed horn or seems to ignore sounds of traffic.

Driver is wearing a hearing aid.

Has trouble hearing or cannot hear normal conversation.

License certificate shows restriction to driving with outside, rear-view mirror on driver's side of vehicle.

34.144—To test for hearing, determine whether the driver can hear ordinary noises like a horn or a person speaking several feet behind him.

34.147—Intelligence is a mental ability sometimes defined as the power of knowing, understanding or solving problems. No great intelligence is needed to operate a vehicle safely, but if the driver drives much, especially in congested areas, extremely low intelligence, such as feeble mindedness, is usually accompanied by a poor accident record. Drivers in most states must pass examinations, either oral or written, on road rules and must understand the meaning of road signs.

Therefore, if a person has passed an examination for a driver's license, he is probably intelligent enough to drive.

34.150—Suspect very low intelligence as a cause if a person is not injured, ill, shocked, intoxicated, or apparently affected in any other way by the accident and

Does not understand the meaning—not just the wording—of road signs or signals after you explain them.

Cannot give sensible answers to your questions.

Seriously gives foolish reasons why he had an accident such as "My car was just attracted off the side of the road."

34.153—When you suspect that a driver may not have enough wits to drive, ask a few simple questions, such as:

How old do you have to be to vote?

What direction is up toward the top of a map.

The engine makes the rear wheels of a car go around. The front wheels are not connected to the engine. What makes them turn?

What month follows September?

34.157—If driver can't answer or has to figure awhile to get the answers, you have further reasons to suspect that he is not very bright. This simple test is not to establish degree of intelligence, but to give you a hint that a person is not intelligent enough to solve some driving problems. Remember that you must be sure that driver is not intoxicated or confused by brain injury or shock. Low intelligence is sometimes indicated if a person who had an opportunity to do so did not get beyond fourth grade in school or was in a special room in school for retarded children.

34.160—Poor judgment of position and speed is another mental defect that contributes frequently to accidents, especially at higher speeds.

34.164—Suspect poor judgment when driver:

Misjudges clearances in overtaking.

Tries unsuccessfully to cross in front of a vehicle or train.

Explains that he thought he had time to make a left turn in face of oncoming traffic.

Thought he had time to enter from drive or minor road or after stopping at sign with approaching high-speed traffic.

Apparently picks too small a gap in traffic in which to cross street. Applies also to pedestrian.

34.168—This situation may easily be confused with lack of *skill* due to insufficient practice or training. There are no simple tests for it.

34.171—Very short drivers and those lacking limbs may have difficulty making the car do what they want it to. Such deficiencies contribute to accidents in situations which require high manipulative skill such as turning movements. Modern vehicles have adjustable seats, and special equipment for handicapped persons is available. Usually, these persons have had special training and, being very much aware of their handicaps, can compensate for them.

34.174—Suspect such a condition contributed when you see that the driver or pedestrian has such deficiencies, but try to discover how they affected the particular accident, if at all.

EXHIBIT

DRIVER PERSONALITY

Deficiencies in any part can be made up, to

What the driver has to start with
NATURAL ABILITIES

Good driving requires no exceptional natural abilities Fairly simple physical and psychological tests can show limitations and need for mechanical aids or better general health and vitality.

What he has acquired
LEARNED

Simple tests can show most deficiencies. Improvement fairly easy by education

SENSES

By which the driver perceives the driving situation.

- Feeling - usually taken for granted
- Seeing - many deficiencies can handicap driver slightly.
- Hearing - relatively unimportant
- Smelling - rarely useful in driving

MIND AND NERVES

By which the driver learns, decides, and connects his senses with his muscles.

- Intelligence - high level not necessary or especially helpful
- Judgment of space and motion.
- Coordination of bodily movements

BONES AND MUSCLES

By which the driver directs and controls his vehicle and moves his body.

- Stature to fit vehicle and its controls
- Strength to operate controls
- Limbs to operate regular or special controls
- Body movement not much needed

KNOWLEDGE OR INFORMATION

Gained by reading, instruction, and observation. Tested by quizzing.

- Of vehicles - care and behavior
- Of highways - surfaces, alignment, direction signs, route markings
- Of sharing the road - road rules, control devices, sight distances, behavior of other street users

REACTION. Using streets and highways with vehicles or afoot involves almost continuous reactions or responses to road and traffic situations. Reactions usually involve all three parts of personality to some degree. The correctness of the reaction depends on the kind of thinking and quality and availability of habitual responses suitable for particular situation.

REFLEX REACTIONS

Instinctive and unthinking. Usually response to emergency. About a tenth of a second but usually a wrong reaction. May be disastrous.

SIMPLE REACTION

A planned response to one expected situation. About a quarter of a second (plus another quarter second if foot has to be moved to brake).

CIRCUMSTANCES THAT

Personality can be changed rather quickly and very seriously by a number of circumstances, many of which may be brought on by the person himself. These affect, more or less, all three parts of personality and therefore the reactions of the driver to traffc situations, that is, his behavior. Many have similar symptoms.

POISONS such as

Alcohol
Narcotics
Carbon monoxide

MEDICINES such as

Insulin
Barbiturates
Antihistamines
Benzedrine

34-1

HAS THREE MAIN PARTS

a certain degree, by overplus in one or more other parts

by study and practice
CAPABILITIES
and training. Experience alone is not a good indicator of proficiency.

How the driver makes himself behave
CHARACTER
Lack of determination to drive right can nullify great natural and acquired abilities. Character is very difficult to test for. Driving records and interviews can show possible need for incentives and penalties.

SKILL AND HABITS
Gained by practice. Once fixed, habits are not easily changed. Driving tests show need for training.

In making the vehicle behave

In recognizing road conditions

In sharing the road - allowing for bad driving by others

In maintaining attention, resisting distraction

ATTITUDES OR MENTAL SETS
How driver evaluates responsibility, risks and satisfactions he gets from driving. What behavior is unthinkable to him. Atitudes may be responsible for such behavior as:

Speed without hurry, that is for its own sake
Doing things because others do

Doing stunts with vehicle

Showing off
Chance taking
Depending on others
Overdoing on trips
Slighting - lazy driving

EMOTIONS
How driver's behavior is modified by his feelings when he is annoyed, frightened, frustrated, elated by traffic or other situations.

Emotions are temporary conditions that may last for only a few minutes or off and on for several days. Some people are subject to more serious and frequent emotional disturbances than others. Emotion tends to result in

Impulsive and ill-considered acts, sometimes unconscious

Frequent preoccupation

REACTION TIME or quickness of response depends mainly on how much thinking has to be done. Speed of reaction is less important than correctness; snap reactions lacking thought are likely to be dangerous especially when there is no time to correct a mistake. Well formed habits are best assurance that correct reaction will be forthcoming in theleast possible time.

COMPLEX REACTION

Selection of practiced response suitable to one of several situations. A half second to several seconds depending on complexity and readiness.

DISCRIMINATIVE REACTION

Thinking and what to do when a good habitual response is not ready. May take several seconds or minutes. May involve moral decisions.

AFFECT PERSONALITY
People are affected differently by these circumstances. Combinations of them are much more serious than one alone; for example, an intoxicated person is much more likely to succumb to monoxide poisoning than a normal person. Many of these conditions cause unconsciousness in extreme degrees and therefore complete loss of control.

DISEASES such as
Heart ailments
Epilepsy
Diabetes
Insanity

FATIGUE
Exhaustion
Tension
Monotony

34.180—There are no licensing requirements for drivers as to height, weight, or strength, except that a few states restrict very short drivers to the use of built-up seats or pedals in a vehicle and most states require them to demonstrate ability to operate a vehicle. Drivers' licenses are granted to amputees when the examiner is convinced that the person can drive safely in spite of his handicap. Usually such licenses are restricted to special equipment if this equipment is needed to pass the road test. Restrictions show on the driver-license certificate. Examine the certificate carefully to see that restrictions are complied with. Some examples of possible restrictions which you might find on a certificate are:

All pedals extended, meaning that the license was issued to a very short person and that he must drive only a vehicle with such pedals.

Automatic gearshift and hand brakes for leg amputees and some paralytics.

All hand controls, for leg amputees and some paralytics.

Mechanical turn indicators for left-arm amputees.

Knob on steering wheel when one hand or arm is missing.

See whether required special equipment is in place and operating.

34.182—It is possible to have a driver demonstrate his ability by actually driving. Watch to see that he *uses* any special equipment.

34.185—Stiff or painful joints can handicap a driver in making the car do what he wishes. Some of the special equipment for amputees may be found on the vehicles of people suffering from stiffness or soreness. Neck and shoulder stiffness may keep a person from looking to one side and therefore contributes to accidents in somewhat the same manner as narrow or tunnel vision. Stiff joints can usually be detected by watching the person walk and drive.

34.188—Extreme overweight has some effect on nimbleness of manipulation. It can contribute to accidents in much the same way as stiffness of joints. The condition is obvious.

34.190—Low strength, for example of small people, invalids, or the aged, is often associated with stiffness or very small size. It may contribute to such accidents as:

Turning accidents; driver saves work by cutting corners.

Insufficient braking.

Other inadequate evasive action.

34.194—Sometimes low strength could be suspected merely by looking at the person. Several rough tests are possible such as turning the steering wheel with the car standing still (without power steering) and braking hard enough to lock all wheels when car is in motion.

34.197—Do not jump to the conclusion that because you find some physical impairment that it contributed to the accident. You must base your conclusion about possible contribution also on other circumstances of the accident, statements of those involved, and your own observations. Some handicapped persons are *better* than average drivers because they are aware of their deficiency and compensate for

it. Therefore, if you see that a handicapped person was a driver in an accident, don't *assume* that his handicap was or was not a cause.

Learned Capabilities

34.205—Natural ability alone is not enough for driving. People in perfect physical and mental condition still have accidents simply because they may yet have to learn to drive, that is, to *learn* certain additional capabilities in the form of *knowledge* and *skill*. We might say that such people can drive but don't yet *know how* to.

34.210—Knowledge by itself is not enough. One might be very well informed about vehicles, roads, and traffic and still be quite unable to drive a car for want of training or practice which develops the necessary habits for skill. Knowledge and skill needed for driving relate to three quite different types of things. See Exhibit 34 - 2.

34.215—Any kind of accident may be contributed to by lack of knowledge or skill because these abilities are so important in control of the vehicle. This does not mean that *every* accident is contributed to by some shortage of knowledge or skill. A driver may have the needed knowledge or skill but not use it.

34.220—Determining lack of knowledge. If you have determined that the direct cause of the accident for a traffic unit was not contributed to by the vehicle or road condition to any great extent, you can conclude that it was entirely or largely faulty behavior of a driver or pedestrian. If the person had the physical and mental abilities needed, but honestly *did not know* that he made a mistake, you can usually conclude that some lack of knowledge is present.

34.225—The rough test for ignorance as a contribution to an accident is to ask the person what the applicable road rule or safe practice is. Take care not to suggest the answer by the way you ask the question. If he does not know, his ignorance probably contributed to the accident.

34.230—Do not confuse lack of knowledge with lack of skillful habits of observation.

> Suppose a person fails to stop at a flashing red light. If he sees the light but does not know that it means stop, he lacks knowledge. If he knows what it means, but inadvertently failed to notice it when his view was unobstructed, he lacks good habits of attention, that is, of skill. If he sees it and knows what it means but *decides* to continue without stopping anyhow, he has a bad attitude.

34.235—Knowledge of evasive action. Ignorance of road rules is not the only important lack of knowledge. A driver also needs to know what to do in emergencies. This is evasive action. After a person has discovered he is in danger, he can usually save himself by proper evasive action if he knows how and discovers the danger in time.

> Suppose a driver enters a curve or turn at or above the critical speed and begins to slide. His initial action contributed to his difficulty though lack of knowledge of the dangers of high speed on curves or by lack of skill in controlling speed in approaching the curve or by lack of skill in attention to road conditions ahead or some combination of these. Now, suppose he puts on his brakes hard because he finds himself going too fast. He shows lack of knowledge of behavior of the car on the road because he does the wrong thing.

EXHIBIT 34-2

Outline of Knowledge and Skills Needed for Driving

	Knowledge—Information Concerning	Skills—Habits of
1. Vehicle	Controls: levers, pedals, steering wheels, buttons, cranks, switches, and locks Instruments: speedometer and gauges Service: providing fuel, oil, water, air and anti freeze Emergencies: how to handle tire, engine, light and other failures Loading: crowding, view obstructions, projections	Making the car behave. Skill necessary to drive on a great, smooth area Starting on level and hills Stopping up and down grade Backing Steering Parking Watching instruments
2. Roads, including direction signs, weather and light conditions	Surface conditions: slipperiness, roughness, holes, and low traction such as snow, mud, sand, fresh oil Alignment: hills, curves, and super-elevation Clearance: shoulders, curbs, guard rails, bridges, tunnels, dividers, holes or bumps Signs: speed, warnings of alignment, surface and clearance; route and direction signs; detour and obstacle markings or warnings Visibility: natural and artificial lights, weather conditions reducing vision, glare fron non-traffic sources Obstacles: animals, barricades, construction projects, etc. Behavior of vehicle on road. What produces skidding and what to do about it	Directing car over roads without any traffic whatsoever Attention to road conditions and resistance to distractions Evaluating road hazards in advance Speed control for curves, grades, unusual surfaces, and light Emergencies: skidding, quick stops
3. Traffic including traffic control devices and pedestrians. Sharing highways with others through agreements on road rules	Position: drive on right, overtaking, preparation for and making turns, parking Right of way: at traffic signals, at unsignalized intersections, of pedestrians, in left turns, driveways Speed: entering from drives, at stop signs, in heavy traffic Spacing: following distance, overtaking, cutting back View obstructions: blind corners, hill crests, parked and moving cars Stopping, Standing and Parking: places where forbidden, manner prescribed. Signs indicating traffic conditions, parking restrictions Signals: of intention to stop, turn, overtake, and for pedestrian Driver and pedestrian behavior especially in congestion and emergencies Safety measures: entering and leaving vehicle	Evaluating traffic hazards in advance especially at view obstructions Speed Control at locations made hazardous by possible traffic Attention to vehicles in the vicinity, especially on cross streets, behind, and parked, and pedestrians in or near roadway Anticipating possible movements of vehicles and pedestrians Spacing in following, overtaking and clearing vehicles and pedestrians Giving signals to other drivers and pedestrians Patience in delay and traffic interference Position in roadway with or without traffic
4. Driver himself	Limitations of abilities	Compensation for limitation of abilities

34.240—Don't confuse lack of knowledge of evasive action with lack of skill in evasive action. Either may lead to an accident. One way to try to find out is to ask, "After you found you were in danger what did you do wrong?" You may not get an honest answer to the question because the driver does not want to admit to himself, let alone another, that he did anything wrong. Another way is to ask the question, "After you found yourself in danger, what did you try to do?" If the driver did not know that he did anything wrong or tells you that he tried to do the wrong thing, you can assume that his trouble is a lack of knowledge. If, on the other hand, the driver seems to know what he should have done but made mistakes in doing it, such as letting the foot slip off the brake onto the accelerator, then it is a lack of skill.

34.245—Don't assume that lack of success in evasive action means either lack of skill or lack of knowledge. The driver simply may not have time to evade the collision. If what he does is right and skillful, we cannot say that lack in these abilities contributed to the accident.

34.250—Skill is that collection of proper habits that enable a person to maneuver his vehicle or to detect road conditions about him without consciously thinking about what he is doing. Skill is the result of practice. Sometimes skill is thought of as the entire behavior of a driver reflecting his knowledge, physical and mental capabilities and attitudes as well as habits, but for purposes of accident analysis it is useful to think of it only as a collection of proper habits. It is acquired as a result of practice and experience.

34.255—It is easy to attribute a driver error to such things as ignorance and attitude, but it may be a skill problem more often than commonly thought. It is sometimes difficult for skilled drivers, such as police officers, to attribute a fault or error to lack of skill. Skillful driving is natural and effortless to such persons, and they assume that everyone else can drive as easily as they.

34.260—There are four general kinds of skill that have to be developed in learning to drive well:

1. *In making the vehicle behave.* This is manipulative skill. It can be tested for by driving problems such as parallel parking, and starting on a steep grade without rolling back.
2. *In recognizing road conditions.* This skill is most easily detected in watching how the driver controls his speed inapproach to places where it must be reduced.
3. *In sharing the road,* that is in judging and allowing for possible bad driving by others. It may also be evident in the consistency with which turn signals are given and proper road position is maintained.
4. *In maintaining attention* and resisting distractions.

34.265—Skill lack can usually be considered as a possible cause of an accident under such circumstances as the following:

> Driver tries to do something that he is unsuccessful in doing. This may range from bumping a car in parallel parking because of operating too fast, to trying to get across the tracks before the train gets to the crossing. Lack of skill of this sort is often hard to tell from lack of judgment. One way to distinguish between the two is by what the driver says about it. If he says, "I didn't realize how close I was," it is probably lack of judgment. If he says, "I could have made it if

I hadn't been so slow in starting," or something like that, it is probably lack of skill, that is, the driver would have been successful if he could have made his plan come out the way he wanted.

Driver fails to do something that he knows he should do, but does not do habitually. Cutting a corner on a left turn, failure to give turn signals, turning from the wrong lane are common errors due to lack of skill, that is the lack of consistent habits in these routine operations.

Failure to see or recognize things which were visible usually indicates lack of skill in attention, especially when there is no strong distraction present.

Improper handling of a skid is almost always lack of skill, especially if the driver knows what he should have done.

A gap skid, such as described in 36.310, is evidence of unskillful evasive action.

34.270—Do not confuse lack of skill with lack of strength, especially in evasive action. Failure to avoid an accident after the hazardous situation has developed may be due partly to lack of skill and partly to lack of strength. In addition be certain that the vehicle was capable of doing what the driver wanted it to. For example, if vehicle quits at a critical time because of some mechanical failure, do not attribute that to lack of skill.

34.275—Lack of skill is more likely to be a factor under the following circumstances:

Inexperienced driver, let us say a new driver with less than six months or 1,000 miles of driving.

Driver in a strange automobile.

Out of practice driver who has not driven for let us say a year.

Driver in heavy traffic who has not had experience in such traffic and becomes confused.

34.286—Do not include as lack of skill the confusion of a driver in a strange place except as it may be indicated in such things as sudden stops to read street name signs, unexpected turns at street intersections and other things that habit as well as knowledge should prevent a person from doing.

Character

34.310—Personality includes all of the things that make a person what he is; physical and mental abilities, knowledge and skill, and also *character*. This latter term we can use for most of the personal causes of accidents that cannot be accounted for by the natural abilities and learned capabilities that have been discussed so far. With proper physical and mental ability, one *can* or is able to drive well; and with proper knowledge and skill, he knows how to; but whether he *will* drive as well as he can and knows how to is a matter of *character*. In some instances, this is indeed a form of moral character. It is against bad behavior as produced by character that the deterrent effect of enforcement is directed.

34.315—Punishment, or the fear of it, will not change a driver's behavior if he does not have the natural ability to do as he should—although it may limit his driving if he knows of his deficiency. For example, if a man cannot see to read a NO LEFT TURN sign, no threat of punishment can make him follow its direction. Nor will the fear of punishment make a man do something that he does not know how to do, although it will stimulate him to learn about those

things which may subject him to punishment. For example, the threat of enforcement cannot make drivers lower headlamp beams in approaching other vehicles until they know what button to push to accomplish this result and until they know the possible consequences in terms of arrest if they fail to do so under certain circumstances. But enforcement is something to be reckoned with by the driver who knows what he is doing and what he should do.

34.320—Character may be said to have two general aspects for our purposes. It may be described in many ways by other people, but let us here consider it to be composed of *attitudes* and *emotions*. This may be an oversimplification, but it will be useful in thinking about the contribution of personality to accidents. We know far less about character as it relates to automobile accidents than the other elements of personality, and it is very difficult to test for.

34.330—Attitude is defined as a state of mind, or mental set, or predisposition to act in a certain manner sometimes irrationally or impulsively. Some attitudes are very stable and don't change, especially those based on ideas implanted in our minds since childhood. Other attitudes may change quickly with the environment. For example, a person may have one attitude among the boys on Saturday night and quite another in church Sunday morning.

34.340—Attitudes can be good or bad for driving depending on whether they are on the side of safety. There is some evidence that a person with an attitude toward work or family or debts or gambling that gets him into trouble usually also has bad attitudes toward driving. Drivers in "borrowed" or stolen cars and those who are youngsters or have strong feelings of inferiority are more likely to have bad driving records than others. When a driver knows and is able to obey, yet fails to obey ordinary safety rules rather consistently, he probably has bad driving attitudes. Often the same behavior may result in one driver from ignorance, in another from attitudes, and in a third driver from some other condition. Attitude can determine how we evaluate our knowledge.

34.350—Many kinds of traffic behavior may be traced to attitudes. Some typical and rather common ones which can often be identified in connection with accidents are:

Speed for the sake of speed or needless hurry. Many drivers get real satisfaction from going faster than they really need to. Among youngsters, especially in open cars and sports cars, this is a form of thrill seeking akin to doing stunts. Among older people it is a more solid satisfaction, a kind of cheap or easy way to get a feeling of accomplishment or of importance and is like bustling about to appear very busy when there's not really much to be done. Others plan a trip schedule optimistically and, finding unexpected delays frustrating, get satisfaction out of speed which makes up some of the lost time. Some people with a competitive attitude get satisfaction from being out ahead and have difficulty suppressing the temptation to overtake and pass any vehicle ahead. Often these attitudes result in a behavior pattern that becomes a bad driving habit so that the continual adjustment of speed necessary for safe driving is regularly neglected. When speed is a matter of sound judgment, and for good reasons, it is not an attitude problem, although it may be as dangerous as though it were.

Doing stupid things because others do such as violation of any law knowingly with the feeling or explanation that because someone else does so it is justified.

Doing stunts with a vehicle on the public way, that is, things which are not necessary for highway transportation. This is *foolhardiness* and may be reckless driving. Racing, playing tag, the "chicken" game, towing people on bicycles or sleds, riding passengers on the bumpers or roof, throwing things into or at passing cars, and such actions are examples. Doing stunts is really using the car or bicycle as a toy or plaything or as sporting equipment rather than as a tool for transportation. Stunting may be fun, but the public highways is no place to do it.

Showing off or exhibitionism. Trying to scare or startle pedestrians or other motorists by driving close to them, driving fast toward the other car and then stopping abruptly just short of striking it, squealing tires on turns, tossing passengers going over bumps, high speed on bridges to rattle loose planking, zig-zag driving, and similar purposely eccentric driving. Showing off is often related to stunting but is done for its effect on other people. In a less hazardous form it shows up in deep-tone mufflers, conspicuous ornaments, and even wise cracking signs painted on the vehicle.

Chance taking is doing things that are unconventional and may be hazardous because the risk appears to be small at this time or place. For example, not stopping for a stop sign at six o'clock in the morning because "there won't be any cars on the boulevard at this hour."

Depending on others to look out. This is the behavior of the driver who sounds his horn for pedestrians, but takes no other precautions. It is also that of the one who overtakes and passes half a dozen cars trailing a truck on a two-lane road expecting someone to open up a space for him if a car comes from the opposite direction.

Overdoing by driving all night or for excessively long hours, especially when there is no particular need to do so. The driver is setting himself tasks to which he would object were they assigned to him by an employer.

Slighting is a kind of laziness or unwillingness to do the right thing if it takes a little longer or more effort. Sloppy turns from wrong lane or with cut corner result. If practiced long these become bad habits. Parking far from the curb results from slighting. So does failure to stop at stop signs and other required places.

34.360—Men — or boys — in their twenties seem to suffer most from bad attitudes especially in stunting and showing off. Middle-aged women are likely to be found depending on others and slighting. In general, attitudes improve with age, but attitude problems may be found in any kind of driver. The young driver can sometimes extricate himself by prompt and vigorous action from traffic traps that attitudes or habits have got him into. As he ages, his evasive action becomes less prompt and vigorous. Therefore he is less able to escape situations that his attitude needlessly gets him into.

34.370—Emotion is a state of excitement or disturbance of the mind. Everyone is more or less emotional, but extremely emotional people, that is, highly excitable and easily disturbed, are thought to be potentially dangerous drivers. Emotions are relatively temporary conditions or states of mind and usually combine with some other condition of the driver or circumstance to cause the accident.

> A driver had a row with his employer and leaves angrily for home. He will do well enough if no annoying and difficult situation confronts him. However if another driver tries aggressively to squeeze into his lane of traffic the angry driver acts stubbornly and refuses to slow or move over; an accident results.

34.380—Any emotion can affect driving. Anger can result in impulsive actions; grief in brooding preoccupation that distracts attention. Fear causes most hit-and-run drivers to evade responsibility.

34.390—Emotion is difficult to discover as a cause of an accident. Nearly

all drivers are more or less emotionally upset after an accident. Do not judge the driver's emotional state just before the accident by his condition after it. Emotion can usually be established only as a possible or probable cause of an accident; rarely as a certain cause. Emotional conditions are suggested when the driver or someone else describes circumstances preceding the accident that might have given rise to the emotion. Usually, however, drivers try to conceal such circumstances. Sometimes they don't recognize emotional conditions themselves and frequently they are forgotten due to new emotions arising from the accident.

Reaction Time

34.410—An appreciable amount of time elapses between the instant a driver becomes aware of a hazard or other road or traffic condition and the instant he begins to do something about it. This is called *reaction* time. This time is taken up by:

1. The sense organs, usually the eyes in registering the condition or *stimulus.*
2. The mind in considering what to do about it.
3. The nerves in carrying the "message" to the muscles.
4. The muscles in beginning to move in the *reaction.*

To this, "thinking" reaction, time must be added to make the movement to control the vehicle before the vehicle will respond to the driver's wishes.

34.420—Four kinds of reactions are recognized, based on the amount of thinking necessary. The less thinking the shorter the reaction.

1. *Reflex reactions.* These are instinctive or mostly so and require the shortest time because they involve no thought. An eye blink is usually a reflex action. Most driving does not involve reflex reaction. In fact, when the stimulus is so sudden and so strong, as in an imminent collision, that reflex action results, the act is usually wrong and often disastrous. It is a hysterical or convulsive response that may push the accelerator instead of the brake. Tire blowouts sometimes cause reflex action.
2. *Simple reactions* are the most common kind in driving because they are expected and the driver knows what he will do when the event occurs. They are often a matter of habit, for example, putting on brakes when a signal turns yellow. This reaction takes normally about a quarter of a second with another quarter second needed to move the foot to the brake.
3. *Complex reactions* in which any one of several stimuli calls for the correct one of several responses. The driver knows which responses to make and must be expecting a stimulus, for example, an arm signal which tells him that the driver ahead intends to turn right or left or to slow down. Complex reactions are slower than a simple reaction. How long a complex reaction takes depends on how complex the stimulus is and how many choices there are for reaction. Normally from half a second to two seconds may be required. Much driving is done by habitual complex reactions.
4. *Discriminative reaction* occurs when a driver is required to make quick choice between two or more actions which are not habitual or practiced, for example, deciding whether to turn to the right or the left of a vehicle which is straddling two lanes. This is the slowest of all the reactions, and may require as much as a minute if the situation is complicated and the urgency slight.

34.430—Reaction time is affected by many things such as:

Age. Very young and especially very old drivers have slow reaction time; the latter often twice normal or average.

Strength of stimulus. Somewhat quicker reaction results from stronger stimuli, but the reaction is also somewhat more likely to be the wrong one with a strong stimulus.

Physical condition. Fatigue, sickness, and poisons usually increase reaction time or decrease the accuracy of reaction.

Habits well formed through training and experience reduce reaction time, especially complex reaction time.

34.440—Reaction is not a separate characteristic by itself but is made up of and is affected by all elements of personality. It depends on physical and mental condition, knowledge and skill, and character. A quick reaction in driving may be far less important than a proper one. The "snap judgment" can result in a quick simple reaction which is wrong for the situation that calls for discrimination. As a person becomes more skillful by practice, he forms quick habitual responses or reactions to situations that formerly required slower discriminatory responses. Thus reaction time includes the time required to comprehend the situation after it has been perceived or seen. Other things being equal, a quick reaction is better than a slow one in driving; but too often persons make quick wrong reactions and then they have no time to correct them before becoming involved in accidents.

34.450—Reaction time is an important element to consider in reconstructing accidents. Estimating it will indicate how far a car would travel at a given speed from the point of surprise before the brakes could be applied.

34.460—Tests for reaction time made after the accident may or may not indicate the reaction time of a driver before an accident because the strength and character of the stimulus and the emotional condition of the driver cannot be reproduced exactly. Rough tests for *simple* reaction can indicate whether the driver is unusually slow because of age, feebleness, illness or drugs, including alcohol.

One of these tests is the coin drop. Hold a coin four feet from the floor above an indicated spot just to the left of the right toe of the shoe of the person being tested. Tell him: "When I drop the coin, you move your foot over the spot to keep it from hitting the floor." The coin takes one-half second to drop four feet. Therefore, if he interrupts the coin the reaction time is less than one-half second; if not, it is more than one-half second. Some people show a long reaction time because they take time to glance down from coin to foot. You may have difficulty in this test in dropping the coin in the right place.

34.470—Perception time. Before a person can start the process that occupies his reaction time, he must sense or be aware of the condition to which he reacts. A hazardous condition might be discernible some little while before it is actually observed. This time is perception time. Perception time, as used here, does not include time required to comprehend or understand or evaluate, but only to register in the sensory organ. Time required to understand or evaluate is part of reaction time. It is impossible to give particular time limits for perception time because it varies so greatly with conditions. The main variable is driver attention. He may not be looking in the direction of the stimulus at the time it appears and cannot, therefore, perceive it until he directs his attention that way.

Suppose that a driver is approaching a blind corner on his right but is watching a car approach on the open corner on his left. Then a car can come out from beyond the view obstruction on his right and travel some distance before he chances to look that way and see it or until it comes into his field of vision. It is possible that the cars may collide before the driver perceives the dangerous situation.

Even if a driver is looking directly toward an object, he may take some time to perceive or recognize it after

it becomes visible in the darkness or through mist, fog or smoke.

34.480—You can understand from the foregoing that perception time is likely to be least for drivers whom we think of as alert. Good habits of attention, high resistance to distraction, and favorable attitudes toward safe driving are even more important than sharp eyesight.

Distractions

34.510—A distraction is something heard, felt or touched, or even thought about that diverts or turns the mind—and sometimes also eyes—away from something to which close attention should be paid. Distractions usually last only a moment but they may go much longer—long enough to cause an accident. There are many kinds of distractions.

Distractions caused by minor emergencies and annoyances are fortunately not frequent, but when they do occur they are very dangerous. A bee coming into the car, or a rock tossed against the windshield by a passing truck, or some part of a load coming loose can all take one's attention easily and completely from driving. If the driver is actually stung or struck or burned, the distraction is aggravated.

Demands from inside the vehicle, such as other passengers, especially young children, pets, and the radio, are well known distractions.

Demands of the driver himself, such as lighting a cigarette, opening and closing the opposite window, arranging clothing, looking at maps, and sorting packages are distractions.

Distractions from outside vehicle are caused by such things as billboards, scenic spots, pretty girls, auto accidents, looking for road signs, fancy cars, and the like and depend greatly upon which kind of things the driver is interested in.

Preoccupation resulting in reverie, wool gathering, or day dreaming is a kind of internal distraction often induced by emotional conditions, extreme interest in some subject of thought, or fatigue. It does not necessarily draw the attention away from driving problems but it dulls it. It slows reactions, especially complex and discriminatory reaction, because the mind has not only to start thinking about the new problem, but it also has first to stop thinking about the subject that preoccupies it. It is probably a frequent and serious form of inattention.

34.520—Anyone can be distracted, but some more easily than others. As a rule, more intelligent persons find more to turn their attention from driving than less imaginative people. Experienced drivers are more likely to let themselves become preoccupied because they have developed skills or habits to handle all *ordinary* driving problems with little thinking. Things outside the vehicle which may be a serious distraction to one person may have no effect on another's attention.

34.530—You rarely can say positively that a distraction was a cause because there usually is no permanent evidence of it. Often a driver is telling the truth when he states that he doesn't remember a distraction, when, in fact, one might have been a principal contributor. On the other hand, a driver may claim a distraction to cover up some driving error that is really due to his ignorance, lack of skill, or falling asleep. Often distractions can be discovered by asking, "What were you doing just before the accident," or "What were you thinking about just before you saw you were in trouble?" Information about distractions within the vehicle may also be had from passengers by careful inquiry.

34.540—You must consider distraction as a possibility whenever there

seems to be a very long perception time. Distraction often involves the same accident circumstances as falling asleep.

Poison, Medicine, Fatigue and Illness

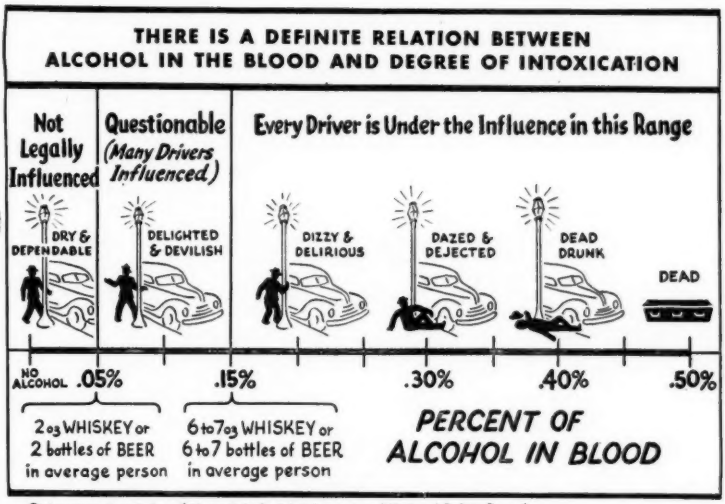
34.603—Effect. Various chemicals taken into the body, many diseases, and fatigue have some effect on most parts of personality that are important to safe driving. Senses may be impaired, strength sapped, thinking slowed, and, especially, emotions may be less controlled. These chemicals and conditions have less effect on basic knowledge, well formed habits, and firm attitudes. When extreme or prolonged, most of them can cause unconsciousness and therefore complete loss of control. At least in accidents that seem to involve unconsciousness before the key point, inquire into these conditions carefully. Sometimes doctors who treat injured drivers can help you find out whether the driver was drugged or ill. Chemicals and illness usually leave detectable symptoms, but fatigue is difficult to detect. It can only be surmised as a possibility or probability from the trip plan and other circumstances.

34.606—Alcohol, even in small quantities, impairs a driver's ability to solve problems of the road and traffic. Persons under the influence are much more likely to have accidents than others. Some people are affected more than others by the same amount of alcohol and the same person is not affected to the same degree at all times. The former is due to the ability of some to absorb the alcohol more slowly or burn it up in the body more readily; the latter may be due to amount of food in the stomach, general physical condition, or other factors.

34.609—Symptoms and tests for intoxication are so well described elsewhere that there is no need to repeat them here. The symptoms of intoxication are very much like those of fatigue in many cases.

34.612—Alcohol affects emotions and superficial attitudes more than anything else. It also reduces the ability to make the right decisions, to anticipate dangerous situations, and to use normal care and judgment. Emotions are released, people are less inhibited, and seem to be exhilarated in the early stages; later on they become depressed and their carelessness is more apparent. However, many people have the ability to pull themselves together and show no symptoms of intoxication until it is well advanced. Reaction time is decreased after the first two or three drinks, later greatly increased. Alcohol can reduce visual acuity and ability to distinguish color, especially when alcohol is combined with other poisons such as carbon monoxide.

34.615—Recognized levels of alcoholic influence. A person may be considered not significantly affected if he has accumulated less than 5 parts of alcohol per 10,000 parts of blood. This is .05 per cent of alcohol in the blood or the equivalent of about two bottles of beer, or two ounces of whiskey for the average-sized person. It takes about six bottles of beer or six ounces of whiskey—and more if drinking is


THERE IS A DEFINITE RELATION BETWEEN
ALCOHOL IN THE BLOOD AND DEGREE OF INTOXICATION
Not Legally Influenced
Questionable (Many Drivers Influenced)
Every Driver is Under the Influence in this Range
DRY & DEPENDABLE
DELIGHTED & DEVILISH
DIZZY & DELIRIOUS
DAZED & DEJECTED
DEAD DRUNK
DEAD
NO ALCOHOL
.05%
.15%
.30%
.40%
.50%
2 oz WHISKEY or 2 bottles of BEER in average person
6 to 7 oz WHISKEY or 6 to 7 bottles of BEER in average person
PERCENT OF ALCOHOL IN BLOOD

● American Association of Motor Vehicle Administrators and National Safety Council.

EXHIBIT 34-3

spread over several hours—in such a person to raise the level of alcohol in the blood to 15 parts in 10,000 or .15 per cent at or above which level a person is definitely under the influence. Between these levels the extent of impairment must be determined further by behavior of the driver.

34.618—Degree of intoxication, or the effect of various amounts of alcohol on the body, are illustrated in Exhibit 34 - 3 and discussed in publications such as the one mentioned in 34.940.

34.621—Signs of intoxication that may be observed in drivers are:

Erratic or unusual behavior of the vehicle driven such as high or low speed or weaving. Driver acts in an unusual manner, slurs words, has trouble standing still and has disorderly clothes. Do not discount intoxication, however, when driver shows none of these signs.

Odor of alcoholic beverage on breath. In the concentrations that appear in the breath alcohol has no odor. What we smell are the extractions and flavoring in the drinks or food. Certain drinks such as vodka cannot be detected by ordor on the breath.

Whiskey, or any bottle containing intoxicants in or around the vehicle, especially an open and partly empty one.

Activity of companions who may not have the ability or feel the need, to pull themselves together.

34.624—If the driver's behavior or condition, the circumstances of the accident, or the places where driver had come from suggest intoxication in any degree, try to get additional evidence to prove or disprove alcoholic influence. The best evidence is a chemical test of breath or body fluids. This requires that someone arrange to take samples promptly. Even if the driver is dead, a blood sample taken at the hospital will show whether he was under the influence. In addition to getting chemical test samples (and always when tests are not made), make certain observations and ask questions about possible conditions beside intoxication that could produce

the symptoms. Record the observations and answers to the questions systematically at the time they are given.

34.627—Do not attribute all unusual actions on the part of the driver to alcohol. Staggering, falling, or speech impediment may be due to illness or injury. Give chemical tests to find out. These tests will tell whether the driver's condition was due all or in part to alcohol. His condition may be, in fact, a combination of alcohol and other factors.

34.630—Narcotics cause narcosis, or stupor. As a rule, it is not a question of how much of a narcotic was consumed, but *whether* any was consumed, because narcotic doses are usually large enough to affect the average person. Some narcotics are exhilarating and some have just the opposite effect. A narcotic does not have the same effect on everyone. Marijuana, for example, makes some excited, others depressed. Narcotic influence is more difficult to detect and prove than that of alcohol because use of narcotics is not so widespread, chemical tests for them are difficult, they leave little or no odor on breath or body, and the materials are easily concealed. The consumption of narcotics leaves fewer clues than is commonly thought. For example, narcotics may be inhaled or smoked. Injection with a hypodermic needle leaves small puncture marks, found usually in the inside of elbow or left arm, but the marks may be on almost any part of the body. The abdomen is a popular spot for novices.

34.633—The effect of narcotics on driving is very much the same as that of alcohol. The driver often feels that he is doing a better than usual job, that everyone will get out of his path, and that no harm can come to him. With narcotics, as with alcohol, the pupils have poor reaction to light, that is, they do not dilate and contract as normally expected. Pupils are ordinarily dilated and contract more slowly than usual when some drugs such as cocaine are used, but with opium, pupils are ordinarily contracted to pinpoints. This tends to make the driver night blind. Barbiturates, such as nembutal, seconal, and phenobarbital, are kinds of narcotic drugs which tend to produce sleep. At best their use is associated with a lack of alertness, a feeling of freedom from responsibility and a slowing of reaction time.

34.636—When there are no obvious physical defects or injuries and you see no evidence of alcohol, yet the driver obviously is not normal, suspect narcotic influence. Occasionally a companion of the driver will admit this. Ask the same questions as for alcohol influence. Try to learn, if possible, the kind of narcotic. This helps in a possible laboratory analysis of any narcotic found on or about a person. There are chemical tests for narcotics, usually by an analysis of blood of the suspected person.

34.639—Other drugs. Persons may be affected intentionally or inadvertently when taking certain kinds of medicine. Some buy drugs only for their narcotic or other effect. Others, who take drugs for medicinal pur-

poses, can be under their influence to a high degree and not be aware of it. There is some variation in the way a drug will affect different people, but not much. However, there is a great difference in the effect of different drugs.

Amphetamine, popularly known as benzedrine, and such cerebral stimulants may cause an overly aggressive domineering attitude like preliminary intoxication.

Anti-histamic drugs, such as benadryl, have a "side reaction" associated with a tired, sleepy condition. They may cause dizziness, difficulty in focusing the eyes, or physical weakness. Their effect is somewhat like that of tobacco, but more acute. The effect of anti-histamic drugs ordinarily lasts about 24 hours.

34.642—Many people who take medicine do not know how long the effect of drugs lasts, particularly the stimulating ones. For example, benzedrine or caffeine in coffee will not prevent sleep forever. They have an effect for several hours depending on the size of the dose and condition of the person; the effect is less long with each subsequent dose. Finally, when the effect wears off, sleep is preceded by less drowsiness and so the driver has less warning of the danger.

34.645—Whenever you suspect use of drugs, be sure to ask about it. People will usually freely admit taking medicine. Sometimes the fact comes out when questioning concerning intoxication. Make the same inquiry and record in the same way as for intoxication.

34.648—*Carbon monoxide or CO poisoning* is due to inhaling fumes from any of several sources, such as stoves and gas heaters. In automobile accidents it usually comes from automobile exhaust systems. Chain smoking of cigarettes while driving will produce dangerous amounts of carbon monoxide in air inhaled. Carbon monoxide is likely to be found in very old vehicles, especially with leaking exhaust pipes and mufflers. However, it is also found in many late model cars. The flow of fumes from leaking exhaust systems can enter vehicle through ill fitting floor mats and other openings. Standing vehicles with motors running are likely to have a dangerous concentration of CO. Some investigations have shown that in heavy traffic, vehicles in motion with open windows are, contrary to popular belief, more susceptible to CO than those with windows closed. Fumes from other vehicles enter the windows.

34.651—CO can be detected by special devices and chemical analysis. Positive identification requires an expert.

34.654—Suspect CO when:

Vehicles have been standing for some time with engine running.

When cars are stalled in heavy traffic, especially in cold weather, they may be lined bumper to bumper. Exhaust fumes from the car ahead enter the heating system of the car behind, causing CO poisoning, unless heating systems are shut off. Symptoms of mass poisoning, which may be mistaken for alcoholic intoxication, can result.

You find leaking exhaust pipes or muffler.

Children have been sick in car for no other explainable reasons.

34.657—Symptoms of CO poisoning vary considerably in individuals. Some persons can go almost to point of collapse without warning signs of CO.

In later stages it is usually characterized by dizziness, tremor, headache, weakness, dilated pupils, muscular rigidity.

34.660—CO poisoning has, in the early stages, many symptoms in common with alcohol and fatigue such as momentary exhilaration, poor judgment, and overconfidence.

34.663—Fatigue or weariness can produce almost every outward symptom of intoxication such as:

Momentary stimulation in early stages characterized by bad judgment.

Impaired physical abilities in later stages such as clumsiness, double vision, slurred speech, lack of coordination, slow reflexes, decreased hearing ability.

Abnormally high persistence. Just as a drunk person is difficult to keep from talking or more drinking, so it may be almost impossible to stop a fatigued person from driving or doing some other kind of work.

Later stages may even be marked by hallucinations and delirium, but this is rare in drivers. Driver finally becomes unconstious by falling asleep, first for a few winks and finally deeply.

Several things help to produce or emphasize symptoms of fatigue or, for that matter, alcoholic intoxication. Smoking, great altitude, and especially monotonous driving on straight roads with little traffic.

34.666—Suspect fatigue in accidents when:

Accident occurred sometime after normal bedtime.

Driver had not had normal or usual amount of rest for some days.

Had worked unusually hard previous to accident.

Had not had normal nourishment for sometime.

Driver works night shift or holds two jobs.

After heavy meal in warm weather.

Had been driving constantly for 10 hours or more.

Circumstances of the accident suggest driver fell asleep.

34.669—The trip plan will give a clue as to driver's fatigue as will answers to questions such as, "When did you sleep last and how long?"

34.672—Illness. Do not confuse symptoms of alcohol, carbon monoxide or narcotics with those of illness. Administer chemical tests if available in all cases where there is the slightest possibility that the driver may be influenced by alcohol. Many chronically afflicted people carry identification cards with instructions in case of emergencies. To make certain that you do not make mistakes with persons who may be ill or who may be poisoned, especially if they are unconscious, call a physician immediately, or have the person taken to a hospital. Never detain a person at the scene of an accident or an office if he displays any symptoms of an advanced stage of any disease or acute illness.

34.675—Heart ailments of various kinds probably affect driving more than usually thought. They are not necessarily diseased conditions. They are more likely to occur in older persons and overweight ones. Occasionally the attack is accompanied by pain, nausea and vomiting, but sudden attacks rarely have these symptoms. Suspect heart attack when driver claims sudden blackout and can give no explanation. Inquire about previous experience with heart trouble.

34.678—Epilepsy or falling sickness is an ailment of the nervous system rather than a disease. It has many forms and is not well understood. Some forms result in attacks or seizures generally classified in two categories: *grand mal* resulting in convulsions, loss of consciousness, falling; and *petit mal*, resulting only in helplessness, plus momentary loss of consciousness without convulsions. Somewhat similar are disturbances of consciousness without convulsions such as narcolepsy in which, after a brief period of drowsiness, the person suddenly falls asleep.

34.680—The effect on driving of epileptic attacks is fairly obvious. The person becomes unconscious or helpless, unable to control his vehicle except in very mild attacks where the driver is experienced and handles the vehicle by his habits.

34.682—Ask questions to bring out *aura* or warning of attack and previous history of attacks, and look for signs that follow attacks of epilepsy such as, bitten tongue, frothing at mouth, and extreme weakness in extremities.

34.684—Diabetes is a deficiency of a gland which secretes insulin. Attacks are characterized by excessive thirst, loss of strength, excessive appetite. Diabetic *coma* results when disease is untreated. It most frequently follows severe mental or physical strain. Sometimes coma or unconsciousness is preceded by headaches, irritability, drowsiness, vomiting and abdominal pains. During coma skin is dry and harsh, mouth and tongue are dry, often gums are swollen.

34.686—Shock and possibly death may result from overdose of insulin used to treat diabetics. A kind of coma is the final stage of this kind of shock and it usually precedes death. The victim may be trembling, weak, perspiring, mentally confused and finally drowsy or comatose or semiconscious.

34.688—Insanity is a persistent, morbid condition of mind, usually connected with some abnormal or diseased condition of the brain or nervous system. It is characterized by lack of control, perhaps excessive day dreaming and hallucinations. It has little to do with intelligence, as persons of very high or very low intelligence may be insane. Most insane persons have some completely normal periods.

34.690—Suspect insanity in an accident driver under one or more of the following conditions:

The person manifests extreme symptoms, such as hysteria.

Seems to be in a completely dazed condition not due to injury in the accident.

You learn from others that the person has a record of insanity.

The accident seems to have been due to unreasonable behavior on the part of the driver.

Driver's explanations make no sense at all.

34.691—Be certain not to confuse a shocked or dazed condition as a result of the accident with low intelligence or insanity. In addition many symptoms of alcoholism, narcotics, or

some illnesses can give the appearance of insanity or low intelligence.

34.692—Diseases of eyes and other sensory organs may produce deficiencies in seeing or perceiving. Most of these will be discovered in examination of the eye and other senses as discussed in 34.104 to 34.142.

34.694—Many other less common diseases affect driving. Among these are:

Carotid sinus synscope, causing loss of consciousness when neck is turned in certain way, such as turning to look before backing.

Locomotor ataxia, loss of control of feet and hands.

Paresis, deterioration of brain resulting in impaired judgment and later insanity.

34.696—Getting proof of disease. Some of the characteristics of diseases that often affect driving have been given so that you may have an idea of how they affect drivers, how to recognize some of them, and what to do about them. Any time you suspect that a driver was ill at the time of the accident with a *chronic* disease, be certain that the authorities responsible for licensing drivers are informed. In serious accidents where you are not sure of the condition, question the doctor who treats the injured or inquire into the medical history of the driver when you have the chance.

Questioning and Recording

34.705—Driver and pedestrian conditions that contribute to accidents are usually obscure. Many drivers do not themselves recognize conditions such as emotional disturbances, bad vehicle operating habits, and even visual deficiencies that contribute. Drivers and their families and friends generally conceal or at least do not reveal certain conditions that might affect behavior. They cover up a record of insanity, epilepsy, numerous previous accidents, heart conditions or any of a number of other circumstances.

34.710—Most driver conditions are discovered, therefore, by recognizing certain clues and running down, confirming, and refuting circumstances. Such clues have been mentioned frequently in the previous pages. Let us review some of them.

Circumstances of the accident suggest certain possibilities and eliminate others.

Obvious defects, such as a missing arm, always require consideration.

Unusual appearnce of the driver or pedestrian and his actions after the accident are important clues. Account for them if possible. If the driver is injured or even badly frightened, this may explain his behavior. Explore for intoxication, medicines, illness, emotional conditions. Very old and very young drivers are more likely to have personality deficiencies than others.

Conditions of the vehicle and its contents can suggest such things as intoxication by empty bottles; fatigue if the vehicle is arranged for sleeping while traveling; driver attitudes if it is equipped with fancy exhaust pipes, "souped up" motor, or exhibitionist stickers or signs; carbon monoxide if it has a leaky exhaust system; and distractions if the car is full of active youngsters.

Trip plan can suggest fatigue by length or time of trip; intoxication by purpose, time, or places visited; medication or disease if going to or from doctor for treatment of driver; speed attitudes by time and distance of trip; and distractions by purpose of the trip.

34.715—Recognition of these clues is mainly a matter of observation. Look harder for them in accidents that are not well enough explained by road, vehicle, and traffic conditions. When two or more different clues point to

the same condition, its probability as a contributing factor is, of course, greatly increased.

34.720—Whenever a clue points to some driver condition, consider whether that condition could have contributed to the accident, and how much. If the circumstances of the accident were such that the driver condition could not possibly have contributed you need pursue the matter no further insofar as determiniing personal causes is concerned. If the circumstances themselves suggest a driver condition, or seem to make a suggested driver condition a possibility, or still more a probability, seek confirming information.

34.725—Much of the confirming information about driver condition comes from drivers themselves. Most of the rest comes from witnesses who know the driver. A little can be had from police records, licensing authorities, and medical sources. Hence, questioning drivers and witnesses is of great importance. General suggestions for questioning are given in 31.110 to 31.550. Specific questions useful in exploring the possibility of intoxication, drugs, and illness are provided on the supplementary field notes described in 46.010 to 46.840. Extremely adroit questioning is needed to get at conditions that a driver wants to conceal. Do not accuse him of such conditions or demand that he tell you about them. This is likely to make him lie about them if he would not do so otherwise. Some approach in which you arouse his interest or solicit his help is better. For example, you might ask, "I'm trying to think what would have caused you to do what you seem to have done. Could you have been ill?"

34.730—Past experience will also often throw some light on reasons for present behavior. Has the driver had accidents before? What were they like? From this you may get some idea of whether a driver condition is causing repeated troubles. Is the driver being treated by a physician? Is he taking medicines? Has he ever been a patient in a mental hospital? Questions about trip plan, time and place of start and expected time and place of destination are examples of inquiries that can be made.

34.735—Drivers can often remember little of what they were doing or how they felt just before a serious accident. The more recent events have blotted these from memory. Attempts to prod or force memory under this condition generally results in getting the driver to agree more or less to what you suggest but not to give you any real information. Hence if your guess is wrong and the driver agrees that your guess is possible because he cannot remember otherwise, you are misleading yourself. Therefore in such accidents you may have little to go on to confirm suspicions of distractions or, especially, drivers being asleep. Sometimes, you can get information by having the driver start back with some event that he does clearly remember and think of what he did or *noticed* or *thought* as he approached the accident location.

34.740—Distractions. In most cases the driver will tell you, if he is able, about emergency distractions such as bee stings, but he will rarely admit such distractions as looking at a billboard, or lighting a cigarette, when he should have been directing his attention to driving. Questions 2, 3, 4, and 5 in 31.335 may give a hint of a distraction or confirm a question that there was a distraction.

34.745—Certain questions that are particularly useful to see whether driver is *well oriented*, that is, to see whether he is aware of his surroundings, relatively alert, and not too confused to handle other questions, are:

Where are you?
Why are you here?
What time is it?

If he can answer quickly and correctly he is probably fairly well oriented.

34.750—Recording the information on driver condition is important if the accident will be analyzed later or if it may result in a trial. Observations and answers to questions related to possible intoxication are most easily put down on a form like the supplementary field notes sheet. The same form provides space for recording useful information about the trip plan. The results of special tests or inquiries will have to be noted on separate sheets, although forms used by hospitals and other agencies are appropriate for reports of physicians and chemists in such matters as tests for intoxication.

34.755—Preserve signs of driver condition such as empty bottles and samples of blood as described in 35.410 to 35.490.

Legal Requirements for Drivers Including Licensing

34.805—In connection with investigation of accidents you have an opportunity easily to discover whether the driver has met the necessary legal requirements. These usually have no direct relationship to the accident although they may throw some light on the personality and condition of the driver.

34.810—Driving while below the minimum age may come to light in accidents involving very young drivers. This condition would suggest the possibility of lack of skill as a mediate cause of the accident.

34.815—All drivers must be licensed as operators, chauffeurs, or learners and to prove it, must have a certificate with them while driving. Lack of the certificate is a failure to meet a legal requirement, of course, but it may also mean that the driver is not licensed or has permitted his license to expire which is the same thing. It may even mean that the driver is under suspension or revocation.

34.820—Examine a certificate closely to determine whether it is valid as described in 31.325.

34.825—Examine the certificate for restrictions on the license. These may give you clues as to physical disabilities that you might not otherwise notice. Was the driver operating in accordance with such restrictions?

34.830—The fact that a driver has a license does not prove that he is at the time qualified to drive especially if it is an out-of-state license or an older driver. All states now require that drivers be licensed and most states have definite requirements that must be met before the license is granted.

34.835—In the majority of states a person must be able to pass a short examination usually covering visual acuity, knowledge of the road rules and traffic signs, and actual operation of a motor vehicle. Learn what the examinations test for in your state.

34.840—A very important requirement of most license laws is that a license shall not be issued to any person who is unable to operate a motor vehicle safely by reason of physical or mental disability. Such laws usually follow the standard law mentioned in 34.930. This law further provides that the licensing authority may require a driver to be re-examined if there is good cause to believe that such driver is incompetent or otherwise not qualified to be licensed. If the driver fails such examination his license may be suspended, or if it is found that he was not entitled to a license his license can be cancelled. You must apply the laws of your own state.

34.845—However, most states did not give examinations when they first required that drivers be licensed. Many states did not give a good examination for years, and today only a very few states require that a driver be able to pass any kind of examination in order to renew the license. Consequently, a vast number of drivers now licensed were never examined at all or were given such a poor examination that it was almost impossible to fail.

34.850—Your state law probably permits the driver-licensing division to take appropriate action if a driver lacks knowledge or skill, habitually uses alcohol, narcotics, or drugs, is a chronic violator or repeater, or has physical or mental disabilities. If it does, then you should make a report to the licensing authority of your state in writing through your superiors in every case in which you have a reason to believe that some specific driver conditions discussed in this chapter other than temporary emotions was a cause or contributed in any manner to a violation or accident.

34.855—When such a report is received the driver-licensing authority may:

1. Examine the driver's record and if otherwise satisfactory simply make this report a part of it.
2. Require the driver to be examined by a regular or special examiner such as a doctor and restrict or suspend the license if the examination is not taken or not successfully passed.
3. In addition to an examination, if the driver's record contains other such reports or records of violations or accidents, he may be called in for an interview and placed on probation or his license restricted, suspended, or revoked.

References

34.910—A discussion of reaction time, including the part it plays in driving and various means of measur-

ing and demonstrating it is contained in:

Reaction Time In Automobile Driving. 1948, 7 pages. Public Safety Memo 95, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill., 15 cents.

34.920—Symptoms of many diseases that may affect drivers are given briefly but completely in:

The Merck Manual. 1950, 1600 pages. Merck & Co., Inc., Rahway, N. J. $5.00. *Pages 270 to 278, diabetes: 949, epilepsy: 1091 to 1099, alcoholism.*

34.930—Rules that define most conventional behavior in driving and conditions for licensing are given in your state motor-vehicle law. A general pattern for such law is the

Uniform Vehicle Code. 1954, 161 pages. National Committee on Uniform Traffic Laws and Ordinances, 1604 K St., N. W., Washington 6, D.C., 75c.

Chapter 6, Operators' and Chauffers' Licenses; Chapter 11, Rules of the Road.

34.940—Many aspects of the problems of alcoholic intoxication in connection with driving with special reference to chemical tests for intoxication will be found in:

FORRESTER, GLENN C., *Chemical Tests for Alcohol in Traffic Law Enforcement.* 1950, 91 pages. Charles C. Thomas, Springfield, Ill., $2.00.

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Allstate Gives $15,000 Grant to Institute

The Allstate Foundation of the Allstate Insurance Company has presented a $15,000 grant to the Traffic Institute of Northwestern University for research and development work in the street and highway traffic field.

In announcing the grant, Ray Ashworth, acting director of the Institute, said that the funds will be used to help the police and others with official responsibilities in traffic supervision and accident prevention to become more effective in carrying on their activities. James Stannard Baker, director of research and development, is in charge of this phase of the Institute's program.

This is the third year Allstate has provided grants to the Institute. There have been increases in the grants each year. In connection with the granting of the funds, Calvin Fentress, Jr., president of Allstate, said:

"It is a privilege for us to make this contribution to the Traffic Institute. The work the Institute is doing to help officials make our streets and highways safer is of the greatest importance to the nation's welfare."

Institute services available to city, county, and state governments include traffic training, field studies, publications, and legal and information service.

Eastern Regional TPA Graduate Conference

Sixty-four men from 34 departments attended the Eastern Regional TPA Graduate Conference March 14-15 in Hartford, Conn., with the Connecticut State Police serving as host. For the second straight year the Eastern conference lead all other regions in total attendance and in number of departments represented. With the exception of New Hampshire, every state in the region was represented. Tentative plans have been made to conduct the 1956 Eastern TPA Graduate Conference March 12-13 in Philadelphia.

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NAAMIC Produces Driver-Witness Film For Institute

"Questioning Drivers and Witnesses in Accident Cases," a 10-minute, 16mm sound motion picture for use in police traffic training, has been produced for the Traffic Institute of Northwestern University.

The film, which was based on and supplements written instructional material on the subject, was produced by the National Association of Automotive Mutual Insurance Companies for the Traffic Institute. It may be purchased from the Vogue Wright Studios, 469 E. Ohio St., Chicago, for $36.00. Film price includes 304-page *Traffic Accident Investigator's Manual.*

The film shows how police get information from drivers and witnesses in traffic accident cases. Explained are techniques of identifying, approaching, questioning, and appraising persons who have witnessed or have been involved in a traffic accident.

"Questioning Drivers and Witnesses" is the fifth in a series of films produced by the insurance association for the Traffic Institute. Others are "Signals and Gestures in Directing Traffic," "Hit-and-Run Investigation," "Detecting and Recording Skidmarks," and "The Traffic Officer in Court."

Arrangements can be made with Vogue Wright Studios to preview these films before purchase.

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TRAINING CALENDAR

(*All training courses will be conducted at the Traffic Institute, Evanston, Ill., unless otherwise indicated.*)

June 1—Deadline for applying for 1955-56 TPA Training Program.
June 9-11—Seminar for Traffic Administrators.
June 20-24—Effective Fleet Operation.
July 11-29—Motor Vehicle Traffic Control (Air Force).
Sept. 14–16— Traffic Safety Clinic for Newspapermen.
Sept 19-Oct. 14—Military Vehicle Safety and Traffic Regulation (Army).
Sept. 22— Opening of 1955-56 TPA Training Program.
Oct. 3-21—Accident Investigation.
Oct. 17-Nov. 4—Traffic Law Enforcement.
Oct. 24-28—Traffic Court Conference School of Law, Northwestern University, Chicago (conducted with American Bar Association).
Oct. 24-Nov. 11—Driver Examination Administration (for chief driver license examiners; conducted for the American Association of Motor Vehicle Administrators).
Oct. 31-Nov. 18— Police Traffic Training Course.
Nov. 7-23—Traffic Law for Police.
Nov. 28-Dec. 9—Police Traffic Training Course, Tulane University, New Orleans, La.
Nov. 28-Dec. 9—Traffic Control Devices and Methods for Police.
Nov. 28-Dec. 9—Supervision of Police Personnel.
Nov. 28-Dec. 2—Traffic Court Conference, School of Law, Tulane University, New Orleans, La. (Conducted with ABA).
Dec. 12-16—Chemical Tests for Intoxication.
Jan. 2-27—Introduction to Police Management.
Jan. 20-Feb. 3—Police Traffic (subject to be determined), University of California, Los Angeles.
Jan 30-Feb. 3—Traffic Court Conference, School of Law, University of Southern California, Los Angeles. (Conducted with ABA).
Jan. 30-Feb. 17—Police Traffic Records.